Look Ahead & Application Delay

What is Look Ahead?

Both Application Delay and Look Ahead are tailored to the business rules and preferences of the retailer. The retailer can choose to have more control for human input, or less control for more automation.

Retailers have always used some method to determine when to place orders for inventory in their stores. Most retailers use software to help predict when inventory should be ordered. The most profitable retailers use more advanced methods and software to figure out reorder points.

When dealing with inventory optimization or inventory automation, it is crucial that the software being used calculates reorder points. A reorder point is a predetermined level of inventory that dictates when to purchase additional items for a particular product. Reorder points take many different factors into account in order to avoid under and overstocking products.

Reorder points also anticipate upcoming increases in sales and rise accordingly to make sure orders will arrive just in time to satisfy demand. This "just in time"

characteristic assumes a smoothly operating supply chain that is never stretched beyond capacity. However, during peak periods, when orders are heavy, both DCs and store personnel may fall behind in handling high order volumes.

To compensate, 4R's solution includes a feature called Look Ahead. This allows retailers to set a "look ahead" parameter. Look Ahead delivers the high reorder points earlier, allowing more time to process the large orders through their supply chain or pre-position inventory in advance of sales. Essentially, Look Ahead helps specify the number of weeks ahead needed to calculate reorder points, and choose the highest one.

The examples below give insight into how this feature works and why it is essential to retailers.

DECEMBER HOLIDAYS EXAMPLE

Everyone knows the holidays are the busiest time of the year for retail stores. Beginning just before Black Friday, retailers see a huge spike in activity and sales in their stores. During this time, it can be difficult to track inventory and keep up with shipments coming into the store. In this example, we put the Look Ahead in place the week of October 7th (week 1). The goal is to schedule the look ahead through all of these busy weeks. Therefore, the last week will be the week of December 30th (week 13).

October 2018

	Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
		1	2	3	4	5	6
1	7	8	9	10	11	12	13
2	14	15	16	17	18	19	20
3	21	22	23	24	25	26	27
4	28	29	30	31			

November 2018

	Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
					1	2	3
5	4	5	6	7	8	9	10
6	11	12	13	14	15	16	17
7	18	19	20	21	22	23	24
8	25	26	27	28	29	30	

December 2018

	Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
							1
9	2	3	4	5	6	7	8
10	9	10	11	12	13	14	15
11	16	17	18	19	20	21	22
12	23	24	25	26	27	28	29
13	30	31					

We want the system to look out across these 13 weeks, generate reorder points, choose the highest reorder point, and deliver it now so the retailer can place orders against that. This allows inventory to be ordered and arrive before the peak time. By ordering ahead, the retailer will ensure their store will have enough inventory to meet the increase in demand.

Week of:	10/5
Look Ahead Value	13

WHAT DATA IS USED?

Dynamic reorder points are recalculated each week using the latest sales trends, supply chain parameters, and other relevant data.

October 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
	1	2	3	4	5	6
X 7	X 8	X 9	X 10	X 11	X 12	X 13
X 14	X 15	X 16	X 17	X 18	X 19	X 20
X 21	X 22	X 23	X 24	X 25	X 26	X 27
2 28	29	30	31			

November 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
				1	2	3
2 4	5	6	7	8	9	10
2 11	12	13	14	15	16	17
2 18	19	20	21	22	23	24
2 25	26	27	28	29	30	

December 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
						1
2 2	3	4	5	6	7	8
2 9	10	11	12	13	14	15
2 16	17	18	19	20	21	22
2 23	24	25	26	27	28	29
2 30	31					

Generally, Look Ahead is used several weeks at a time. This needs to be adjusted and monitored to ensure the look ahead feature isn't going to order excessively and result in over-stocking. In this example, the look ahead feature was ended the week of October 28th.

Week of:	10/5	10/12	10/19	10/26	11/2	11/9
Look Ahead Value	13	12	11	2	2	2

WHAT IS THE APPLICATION DELAY?

In addition to using the Look Ahead feature, there is a second element that can be utilized to further enhance the effectiveness of the Look Ahead. This feature is Application Delay.

The reorder point Application Delay defines the number of weeks from now that the reorder point being calculated is intended to be used to calculate orders. A normal setting for most clients is one week. In other words, the reorder point we calculate this week is expected to be used starting next week. This allows enough time for 4R or the retailer to review outliers and insure good quality of these reorder points prior to delivery to clients.

The Application Delay is used to cut off inventory after a sharp decline in peak demand. Going back to the holiday example, it is used if there was an excess of inventory brought in to cover increases in demand. However, after this high volume is brought it, the retailer does not want to continue bringing in high volumes of inventory. Essentially, the Application Delay enables us to look at seasonality trends beyond the high demand periods and deliver the appropriate reorder points now.

Both Application Delay and Look Ahead are tailored to the business rules and preferences of the retailer. The retailer can choose to have more control for human input, or less control for more automation.

DECEMBER HOLIDAYS EXAMPLE

Let's use the same December holiday example from before to further understand the Application Delay functionality. During the holidays, demand increases. But once this period is over, demand will see a sharp drop off and return to normal. As mentioned earlier, we want return to the reorder points that are beyond the peak sales period in order to bring in the appropriate amount of demand. In this example, the week beyond the peak season is January 13 – week 12.

October 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
	1	2	3	4	5	6
X 7	X 8	X 9	X 10	X 11	X 12	X 13
X 14	X 15	X 16	X 17	X 18	X 19	X 20
X 21	X 22	X 23	X 24	X 25	X 26	X 27
2 28	29	30	31			

November 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
				1	2	3
2 4	5	6	7	8	9	10
2 11	12	13	14	15	16	17
2 18	19	20	21	22	23	24
2 25	26	27	28	29	30	

December 2018

Sun.	Mon.	Tue.	Wed.	Thur.	Fri.	Sat
						1
6 2	3	4	5	6	7	8
7 9	10	11	12	13	14	15
8 16	17	18	19	20	21	22
9 23	24	25	26	27	28	29
10 30	31	1	2	3	4	5
11 6	7	8	9	10	11	12
12 13	14	15	16	17	18	19

The week of 10/28 will be used as week 1. We will then use the current forecast from 10/28 and by using the Application Delay of 12 weeks, the system will use the seasonality for January 13 to predict the new reorder points.

BENEFITS OF USING LOOK AHEAD AND APPLICATION DELAY

There are benefits to using both the Look Ahead and Application Delay features. Using the Look Ahead feature allows retailers to maximize sales and profit by having inventory available for customer purchase. This is accomplished by bringing in inventory in advance of potential bottlenecks in the distribution centers or the stores.

Retailers also benefit by using Application Delay because they can avoid being over inventoried after a seasonal peak. Application Delay ensures inventory orders drop off at the appropriate time and return to normal.

THE BOTTOM LINE

Look Ahead and Application Delay are built into 4R's solution to maximize profit. These work seamlessly with all of 4R's profit optimized solutions. They simplify the management of the most complex supply chains, give the retailer as much control as desired, and always increase profit.

Profit Optimizing Retail

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